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ABSTRACT

This document investigates the widely used school climate assessment instrument, the CFK Ltd. School Climate Profile. Part A (General School Climate Factors) was administered by school to a junior high campus (n=257) and a high school campus (n=906) in a major metropolitan area in the Southwestern United States to gather data for administrative planning and curriculum revision. Results are given of a multivariate analysis performed on the data, and modified versions of the CFK instrument are suggested. Cronbach alphas for the modifications are presented. (Author/DCS)

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TITLE: Management and Research Perspectives on the CFK School Climate Instrument

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DESCRIPTORS: School Climate; CFK School Climate Profile; Instrument Development; School Climate Instruments; School Climate Assessment; General School Climate Factors; Instrument Validation.

ABSTRACT: An investigation was made of The CFK Ltd. School Climate Profile, a widely used school climate assessment instrument. Part A (General School Climate Factors) was administered by school to a junior high campus (n=257) and a high school campus (n=906) in a major metropolitan area in the Southwestern United States. A multivariate analysis was performed on the data. Modified versions of the CFK instrument are suggested. Cronbach alphas for the modifications are presented.

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ABSTRACT

A psychometric investigation was made of The CFK Ltd. School Climate Profile, a widely-used school climate instrument. Part A (General Climate Factors) was administered by school to a junior high campus (n=257) and a high school campus (n=906) in a major metropolitan area in the Southwestern United States. A statistical analysis was performed on the data. Modified versions of the CFK instrument are suggested. Cronbach alphas for the modifications are presented.

Management and Research Perspectives on the
CFK School Climate Instrument

INTRODUCTION

A psychometric investigation was made of The CKF Ltd. School Climate Profile, a widely-used school climate instrument. Part A, General Climate Factors, was administered recently by school to a junior high school campus (n=257) and a high school campus (n=906) in a major metropolitan area in the Southwestern United States. The junior high campus data composition (n=257) was as follows: (1) 30 administrators and teachers at the junior high school, (2) 82 seventh graders, (3) 65 eighth graders, and (4) 78 ninth graders. The high school campus population (n=906) was comprised of the following: (1) 85 administrators and teachers at the high school, (2) 332 tenth graders, (3) 249 eleventh graders, and (4) 240 twelfth graders.

The school climate profile was administered to the two campuses to gather data for administrative planning and curriculum revision. According to the authors' divisions of the instrument, there are eight subscales: respect, trust, high morale, opportunity for input, continuous academic and social growth, cohesiveness, school renewal, and caring. Each subscale of the instrument is comprised of five variables (questions). The scaling technique used is two discrepancy format columns. Each column has four descriptors:

(1) almost never, (2) occasionally, (3) frequently, and (4) almost always.

Data analysis by junior high and high school suggest that the CFK instrument might be modified in places. Three possible modified versions of the instrument are suggested.

PSYCHOMETRIC ANALYSIS OF THE CFK INSTRUMENT

The psychometric properties of the CFK instrument were assessed for both the junior high and high school populations. Factor analysis was used to examine the construct validity of the instrument. The factoring method was PA2 (principle factoring with iteration). The method of rotation was varimax. Instrument questions with factor loadings greater than or equal to 0.4 were included in the subsequent reliability analyses (Cronbach's alpha was the reliability measure).

Factor analysis of the junior high school population (n=257) gave three principle factors for the What Is column, hereby evidencing three What Is subscales. The following table summarizes the What Is column data from the factor analysis.

FACTOR ANALYSIS OF WHAT IS COLUMN (JUNIOR HIGH)

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS	EIGENVALUES	PCT OF VARIANCE
Factor 1	15,20,26,36, 38.39,40	n=7	8.22885	50.2
Factor 2	24,31,33	n=3	1.45415	8.9
Factor 3	2, 5,12	n=3	0.99187	6.1
			cum PCT =	65.1

A subsequent factor study gave only one What Should Be principle factor. The following table summarizes the What Should Be data from the factor analysis.

FACTOR ANALYSIS OF WHAT SHOULD BE COLUMN (JUNIOR HIGH)

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS	EIGENVALUES	PCT OF VARIANCE
Factor 1	6,20,21,22,32 36,37,39	8	13.46329	72.5

The factor results for each of the discrepancy columns were then compared. A composite group of questions were obtained from the overlap of the two column factors (What Is and What Should Be). It was observed that factor 1 for What Is more nearly matched factor 1 for What Should Be than did What Is factors 2 or 3. The psychometric properties of the overlap of the two column questions are summarized below.

OVERLAP OF WHAT IS/WHAT SHOULD BE FACTOR QUESTIONS (JUNIOR HIGH)

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS
Factor 1 (What Is)	15,20,26,36,38,39,40	7
Factor 1 (What Should Be)	6,20,21,22,32,36,37,39	8
Overlap	20,36,39	3

The Cronbach alphas for the overlapping questions are as follows: (1) the three What Is questions (questions 20, 36,39), alpha = 0.58624, (2) the three What Should Be questions (questions 20,36,39), alpha = 0.73485, (3) all the questions in (1) and (2), alpha = 0.74722. This data indicates at best there are 3 What Is (n=18) and 1 What Should Be (n=8) subscales. If the more stringent requirement of overlapping for the two subscales is taken, there is only 1 composite subscale of 3 questions. The instrument is not hanging-together as was originally proposed by its authors in suggesting 8 What Is and 8 What Should Be subscales.

Next an investigation of the instrument was made with a high school population (n=906) from a large 4-A high school in the Southwestern United States. Factor analysis suggested 3 What Is and 3 What Should Be factors. The following table summarizes the What Is column data from the factor analysis.

FACTOR ANALYSIS OF WHAT IS COLUMN (HIGH SCHOOL)

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS	EIGENVALUES	PCT OF VARIANCE
Factor 1	26,27,30 to 40	13	12.56346	70.5
Factor 2	22 to 31	10	2.02549	11.4
Factor 3	5,6,7,9	4	0.99745	5.6
			cum PCT =	87.5

Subsequent factor analysis gave three What Should Be principle factors. The following table summarizes this data from the factor analysis.

FACTOR ANALYSIS OF WHAT SHOULD BE COLUMN (HIGH SCHOOL)

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS	EIGENVALUE	PCT OF VARIANCE
Factor 1	29 to 40	12	17.72064	78.8
Factor 2	18 to 31	14	2.79825	12.4
Factor 3	8 to 20	13	1.26687	5.6
			cum PCT =	96.8

The factor findings for each of the discrepancy columns were then compared. A composite group of questions was obtained from the overlap of the two column factors (What Is and What Should Be). It was observed that What Is and What Should Be factors matched most nearly as follows: Factor 1 What Is with Factor 1 What Should Be, Factor 2 What Is with Factor 2 What Should Be, and Factor 3 What Is with Factor 3 What Should Be. The overlap of the two column questions follows.

OVERLAP OF WHAT IS/WHAT SHOULD BE FACTOR QUESTIONS (HIGH SCHOOL)

WHAT IS FACTORS/ QUESTIONS	WHAT SHOULD BE/ QUESTIONS	N OF QUESTIONS	QUESTION OVERLAP
Factor 1; 26,27, 30 to 40	Factor 1; 29 to 40	11	30 to 40
Factor 2; 22 to 31	Factor 2; 18 to 31	10	22 to 31
Factor 3; 5,6, 7,9	Factor 3; 8 to 20	1	9

The Cronbach alphas for the overlapping questions are as follows: (1) the eleven What Is questions (questions 30 to 40), alpha = 0.92384; (2) the eleven What Should Be questions (questions 30 to 40), alpha = 0.95915; and (3) all the questions in (1) and (2), alpha = 0.96378; (4) the ten What Is questions (questions 22 to 31), alpha = 0.89259; (5) the ten What Should Be questions (questions 22 to 31), alpha = 0.94214; and (6) all the questions in (4) and (5), alpha = 0.94840; (6) the alpha for question 9 What Is and question 9 What Should Be is 0.45027. This data suggests at best there are 3 What Is subscales (n=23) and 3 What Should Be subscales (n=39). If the more stringent requirement of overlapping questions from the two subscales is taken, only two subscales of merit exist (the subscale with only question nine should be discarded for obvious psychometric reasons). Furthermore the two remaining subscales are factorially complex in the sense that questions 30 and 31 reside in both subscales.

A PROPOSED MODIFIED VERSION OF THE CFK

On the basis of this psychometric study, the data analysis suggests the instrument is not composed of eight discreet subscales. Further, analysis of junior high and high school data suggests different versions of the instrument would be appropriate for junior high and high school (since the factor patterns were not similar for the junior high and high school data).

This present analysis suggests a beginning for a junior high version with the three What Is factors and the one What Should Be factor. For the high school version, the data analysis found the two subscales: (1) subscale 1 of questions 30 to 40, and (2) subscale 2 of questions 22 to 31. Furthermore subscale 1 of questions 30 to 40 is really a composite mainly of the original School Renewal and Caring questions, while subscale 2 (questions 22 to 31) is a mix mainly of continuous Academic and Social Growth plus Cohesiveness questions.

A single instrument for both the junior high and high school students would be composed of the two overlapping factor questions derived from the factor analysis on all the respondents'data (n=1163). The subscales suggested from the analysis would be as follows: (1) subscale 2 (questions 22 to 25 and 28 to 31) of mainly continuous Academic and Social Growth and Cohesiveness; and (2) subscale 3 (questions 30 to 40) of School Renewal and Caring.

Though the two factors here do correspond generally to the high school factors, it should be noted that the pooled cases (n=1163) are comprised mostly of the high school cases (n=906).

Also one might consider expanding the number of response categories to five or six as opposed to the four currently built into the instrument. There is research evidence which indicates that four response categories do not maximize discriminability.

Our psychometric analysis thus suggests that the CFK instrument is not holding-together in subscales as its developers postulate. Subsequent modified versions of the instrument have been suggested. When all the junior high and high school cases were pooled (n=1163), three What Is factors and three What Should Be factors emerged.

FACTOR ANALYSIS OF WHAT IS COLUMN FOR ALL RESPONDENTS (N=1163) FOR JUNIOR HIGH AND HIGH SCHOOL

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS	EIGENVALUES	PCT OF VARIANCE
Factor 1	26,27,30 to 40	13	11.82221	72.5
Factor 2	1,2,5,6,7,9,12	7	1.76713	10.8
Factor 3	22 to 25 28 to 32	9	0.97329	6.0
			cum PCT =	89.3

FACTOR ANALYSIS OF WHAT SHOULD BE COLUMN FOR ALL RESPONDENTS (N=1163) FOR JUNIOR HIGH AND HIGH SCHOOL

FACTORS	INSTRUMENT QUESTIONS	N OF QUESTIONS	EIGENVALUES	PCT OF VARIANCE
Factor 1	30 to 40	11	16.95175	80.1
Factor 2	18,19,21 to 31	13	2.49599	11.8
Factor 3	8 to 20	13	1.10114	5.2
			cum PCT =	97.1

The factor findings for each of the discrepancy columns were then compared. A composite group of questions were obtained from the overlap of the two column factors (What Is and What Should Be). It was observed that the What Is and What Should Be factors matched most nearly as follows: Factor 3 What Is and Factor 2 What Should Be; Factor 1 What Is and Factor 1 What Should Be. The overlap of the two column questions follows.

OVERLAP OF WHAT IS/WHAT SHOULD BE FACTOR QUESTIONS FOR ALL RESPONDENTS (N=1163) FOR JUNIOR HIGH AND HIGH SCHOOL

WHAT IS FACTORS/QUESTIONS	WHAT SHOULD BE FACTORS/QUESTIONS	N OF QUESTIONS	OVERLAP QUESTIONS
Factor 3: 22 to 25, 28 to 32	Factor 2: 18,19, 21 to 31	8	22 to 25, 28 to 31
Factor 1: 26,27, 30 to 40	Factor 1: 30 to 40	11	30 to 40

The Cronback alphas for the overlapping questions are as follows: (1) the eight What Is questions (22 to 25 and 28 to 31), alpha = 0.85326; (2) the eight What Should Be questions (22 to 25 and 28 to 31), alpha = 0.91773; (3) the eleven What Should Be questions (30 to 40), alpha = 0.95263. The alpha for all What Is and What Should Be questions is 0.96404.

On the basis of these findings for the junior high population, the high school population, and the pool of both, revisions of the instrument are suggested. Such is the process of instrument refinement. After an instrument is initially constructed, later incoming data can help refine the scale.

As a point-in-time to begin looking at school climate, the researchers have used the original CFK scale in several studies and have been pleased with the scale. These refinements are suggested to improve the instrument even more than is currently the case.

APPENDIX A: **The CFK Ltd. School Climate Profile**

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Please write the number beside each statement that best indicates your opinion concerning first "What Is," and then "What Should Be." Please use the following rating scale:

1. Almost Never
2. Occasionally
3. Frequently
4. Almost Always

Please check one of the following. I am a:

____ Student
____ Teacher
____ Parent
____ Secretary or other staff
____ Administrator in this school
____ Superintendent or central administrator

Part A General Climate Factors	What Is: Almost Never 1	Occasionally 2	Frequently 3	Almost Always 4	What Should Be: Almost Never 1	Occasionally 2	Frequently 3	Almost Always 4
Respect								
1. In this school even low achieving students are respected.								
2. Teachers treat students as persons.								
3. Parents are considered by this school as important collaborators.								
4. Teachers from one subject area or grade level respect those from other subject areas.								
5. Teachers in this school are proud to be teachers.								
Trust:								
1. Students feel that teachers are "on their side."								
2. While we don't always agree, we can share our concerns with each other openly.								

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Part A General Climate Factors (Continued)	What Is:				What Should Be:			
	Almost Never	Occasionally	Frequently	Almost Always	Almost Never	Occasionally	Frequently	Almost Always
	1	2	3	4	1	2	3	4
3. Our principal is a good spokesman before the superintendent and the board for our interests and needs.								
4. Students can count on teachers to listen to their side of the story and to be fair.								
5. Teachers trust students to use good judgment.								
High Morale								
1. This school makes students enthusiastic about learning.								
2. Teachers feel pride in this school and in its students.								
3. Attendance is good; students stay away only for urgent and good reasons.								
4. Parents, teachers, and students would rise to the defense of this school's program if it were challenged.								
5. I like working in this school.								
Opportunity for Input:								
1. I feel that my ideas are listened to and used in this school.								
2. When important decisions are made about the programs in this school, I, personally, have heard about the plan beforehand and have been involved in some of the discussions.								
3. Important decisions are made in this school by a governing council with representation from students, faculty, and administration.								
4. While I obviously can't have a vote on every decision that is made in this school that affects me, I do feel that I can have some important input into that decision.								
5. When all is said and done, I feel that I *count* in this school.								

Part A General Climate Factors (Continued)	What Is:				What Should Be:			
	Almost Never	Occasionally	Frequently	Almost Always	Almost Never	Occasionally	Frequently	Almost Always
	1	2	3	4	1	2	3	4
Continuous Academic and Social Growth:								
1. The teachers are "alive;" they are interested in life around them; they are doing interesting things outside of school.								
2. Teachers in this school are "out in front," seeking better ways of teaching and learning.								
3. Students feel that the school program is meaningful and relevant to their present and future needs.								
4. The principal is growing and learning, too. He or she is seeking new ideas.								
5. The school supports parent growth. Regular opportunities are provided for parents to be involved in learning activities and in examining new ideas.								
Cohesiveness:								
1. Students would rather attend this school than transfer to another.								
2. There is a "we" spirit in this school.								
3. Administration and teachers collaborate toward making the school run effectively, there is little administrator-teacher tension.								
4. Differences between individuals and groups (both among faculty and students) are considered to contribute to the richness of the school; not as divisive influences.								
5. New students and faculty members are made to feel welcome and part of the group.								
School Renewal:								
1. When a problem comes up, this school has procedures for working on it; problems are seen as normal challenges; not as "rocking the boat."								

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Part A General Climate Factors (Continued)	What Is:				What Should Be:			
	Almost Never	Occasionally	Frequently	Almost Always	Almost Never	Occasionally	Frequently	Almost Always
	1	2	3	4	1	2	3	4
2. Teachers are encouraged to innovate in their classroom rather than to conform.								
3. When a student comes along who has special problems, this school works out a plan that helps that student.								
4. Students are encouraged to be creative rather than to conform.								
5. Careful effort is made, when new programs are introduced, to adapt them to the particular needs of this community and this school.								
Caring:								
1. There is someone in this school that I can always count on.								
2. The principal really cares about students.								
3. I think people in this school care about me as a person; are concerned about more than just how well I perform my role at school (as student, teacher, parent, etc.).								
4. School is a nice place to be because I feel wanted and needed there.								
5. Most people at this school are kind.								

THE END

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